BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 National Diploma in Construction and the Built Environment Pearson BTEC International Level 3 National Extended Diploma in Construction and the Built Environment
Unit number and title	Unit 25: Building Services Control Systems
Learning aim(s)	A: Understand the principles associated with building control systems.
Assignment title	The Purpose, Function and Fundamental Principles of Building Services Control Systems
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	You have been employed as a building services technician in the design office of a large Building Services Design Consultancy practice. The company have recently won a project designing the building services systems for a new hotel. You have been asked to support the chief building services engineer, preparing a building services design for a floor of the accommodation block of the hotel. The floor shown in Figure 1 provides accommodation for guests across 20 rooms. The typical floor to ceiling height in each of the rooms is 3m. The hotel has external walls of brick and block construction and roof slopes are covered in slate. The walls and roof of the hotel are insulated with 50mm and 150mm of rockwool insulation respectively and finished internally with painted plaster. The chief building service engineer has stated that the hotel is located in a country where the average external temperature is 10°C. The client has confirmed that the hotel should be maintained at an internal temperature is 18°C to 21°C. The hotel's hot water control system should be specified to provide guest with hot water on demand. The client wants to attract business people to the hotel and each room should be fitted with: • Reading lights either side of the bed. • A feature LED strip light is to be fitted around the headboard. • A personal climate control unit • A hair dryer • A large TV, MP connectivity and internet access • Excellent lighting, appropriately located with levels appropriate to activity • A telephone • A mini fridge • A window with electrically operated black out ability • A digital safe
Task 1	The chief building services engineer has asked you to research and evaluate manufacturing literature and data, to prepare a schematic design for the lighting, heating and hot water control systems for the

	typical bedroom floor layout shown in Figure 1. You should illustrate your design on a schematic control drawing and must: (a) Detail all of the control components and their locations. (b) Annotated the drawings with sufficient notes to describe the operational features and mode of control for the control loops of the lighting, heating and hot water control systems. You should outline the purpose and function of components, and their safety characteristics. (c) Explain and justify in an accompanying report the selection of components (sensor, actuators, control devices and controllers) you recommend be used in the lighting, heating and hot water systems against design factors such as legislative constraints and client requirements.
Checklist of evidence required	• A schematic drawing illustrating the specific control systems, and • an accompanying report. Both documents should be well referenced to manufacturer literature and data.

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
25/A.D1	Justify the selection of a building services control system, its components and all of its operational features, for a given scenario.
25/A.M1	Assess the selection of a building services control system, its components and most of its operational features for a given scenario.
25/A.P1	Explain the selection of a building service control system, its components and some of its operational features for a given scenario.

Sources of information to support you with this Assignment	David V Chadderton–Building Service Engineering, 6th edition, (Routledge, 2012) ISBN 9780 415699327 Fred Hall and Roger Greeno- Building Services Handbook, 9th Edition (Routledge, 2017) ISBN 9781 138244351 www.cibse.org
Other assessment materials attached to this Assignment Brief	Hotel floor layout plan

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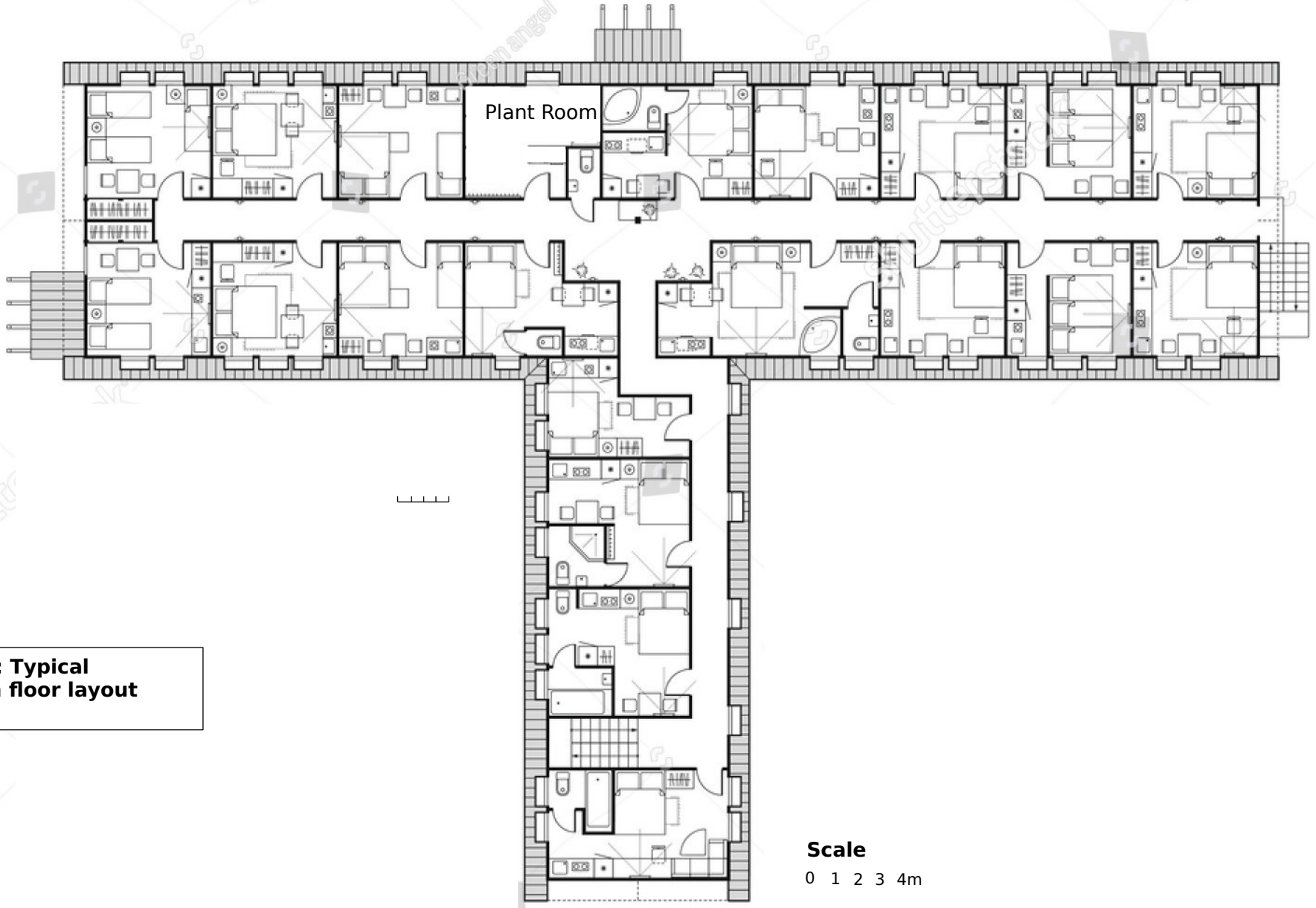

Figure 1: Typical bedroom floor layout

Source of image: NOTE: Image has been amended.

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